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14. ABSTRACT

Network Centric Warfare is clearly the next great revolution in warfare but it is certainly not going to be the death of the operational level of war. NCW will change our military and has already begun to reduce levels of command at the tactical level. But when NCW is implemented fully and the 3 domains of physical, information and cognitive are taken into account in that implementation it is clear that the operational level of war is not disappearing but becoming increasingly important. The operational commander of the future will practice the operational arts in the form that has been touted by Clauzewitz and Sun Tzu and technology will once again become a tool rather than an answer.

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Network Centric Warfare – Death or renaissance of the operational arts and the operational level of war.

by

Tim L. Day

Colonel, U.S. Army

A paper submitted to the Faculty of the Naval War College in partial satisfaction of

the

requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily

endorsed by

the Naval War College or the Department of the Navy.

Signature: _____
17 May 2005

_____
Santiago Neville, CAPT, USN

There are those in the defense industry who would say that Network Centric Warfare will bring about the death of the operational level of warfare as technology will allow decision makers at the strategic level to direct tactical level operations. Those who posit this idea have missed the point concerning the purpose and abilities of NCW; in fact I believe the opposite will occur. NCW will not only *not* eliminate the operational level of warfare, it will finally provide the military with the ability to conduct truly synchronized, joint and interagency operations thus enabling the operational commander to dominate on the battlefield during decisive operations and win the security and stability fight that follows. This makes the operational level of war the center of gravity for the most effective use of NCW. By examining key concepts of NCW to include definition, corporate strategy, networking, knowledge management, the human factor, and organizational impact, I believe it is possible to validate the future of the operational level of war as a critical component of a network centric force.

Defining and Redefining NCW

The term Network Centric Warfare (NCW) is often used in the military to describe a multitude of applications of technology in modern warfare. If you ask ten different people what they believe NCW is you will likely get ten different answers. Almost all of them will relate it to the use of technology in warfare but few really understand the true nature and intent of NCW, which is to enable a commander to harness the power of information to give him a decisive edge in achieving his military objective. There is no current specific definition for NCW in the Department of Defense (DoD) and as of this writing there are 3 versions of the definition being considered for DoD approval. There are some who say that NCW is such a rapidly evolving process that

there is little use in trying to rigidly define it because new applications and technologies cause our understanding of NCW to change with each new concept proposal or technical breakthrough. This suggests that our understanding of the potential of NCW is really at the nominal stage. Currently the DoD Office of Transformation primarily uses the definition provided in Alberts, Gartska, and Stein's book, Network Centric Warfare - Developing and Leveraging Information Superiority, which states that NCW is:

> An information superiority – enabled concept of operations that generates increased combat power by networking sensors, decision makers, and shooters to achieve shared awareness, increased speed of command, higher tempo of operations, greater lethality, increased survivability, and a degree of self-synchronization. In essence, NCW translates information superiority into combat power by effectively linking knowledgeable entities in the battlespace.[1]

The bottom line of this definition is that DoD believes that with the arrival of the information age the next great development in warfare will be the ability to translate information into combat power to provide a decisive edge in military operations. DoD arrives at this conclusion by delineating what they call the tenets of NCW:

> NCW represents a powerful set of warfighting concepts and associated military capabilities that allow warfighters to take full advantage of all available information and bring all available assets to bear in a rapid and flexible manner.
>
> A robustly networked force improves information sharing.
>
> Information sharing enhances the quality of information and shared situational awareness.
>
> Shared situational awareness enables collaboration and self-synchronization, and enhances sustainability and speed of command.
>
> These, in turn, dramatically increase mission effectiveness.[2]

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[1] David S. Alberts, John J. Gartska, Frederick P. Stein, <u>Network Centric Warfare Developing and Leveraging Information Security, 2nd Ed (Revised)</u>, C4ISR Cooperative Research Program, Wash D.C. Feb 2000, pg 2.

[2] Dept of Defense Report to Congress March 2001 Network Centric Warfare, Executive Summary, pg. i, http://www.defenselink.mil/nii/NCW/ncw_exec_sum.pdf 7 Apr 2005 (accessed)

All of that makes it seem logical that NCW will be a major factor in defining the future of warfare for U.S. forces. But the basic problem with this process is that the major efforts in achieving NCW so far have been led by "techies" who are more comfortable in the science realm of warfare and as a result our strategy to achieve NCW primarily focuses on the technical and theoretical applications of technology and knowledge without regard for the human factor and the "real world." No one doubts the advantage that information superiority can bring to enhance combat power, but without learned leaders who can apply NCW to the attainment of political and military objectives then all of the technology and knowledge in the world will not make NCW a truly decisive factor in warfare.

Does the fact that the NCW main effort is being led by network guys rather than operational leaders mean we are on the wrong track? Absolutely not, or at least not yet! But NCW can not be successful until senior leaders assert themselves with what Bill Gates of Microsoft calls "owning process change."[3] There is recognition in DoD of a more holistic approach to NCW, and the 2001 DoD report to Congress on NCW delineates this extremely well in its discussion of "domains" in the relationships of warfare:

> transformational combat power enabled by NCW concepts can only be understood by focusing on the relationships in warfare that take place simultaneously in and among the *physical,* the *information, and* the *cognitive* domains.
>
> *Physical Domain:* The physical domain is the traditional domain of warfare. It is where strike, protect, and maneuver take place across the ground, sea, air, and space environments. It is the domain where physical platforms and the communications networks that connect them reside.

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[3] Bill Gates, Business @ The Speed of Thought, Warner Books, New York, NY, March 1999. pg 314.

Information Domain: The information domain is the domain where information lives. It is the domain where information is created, manipulated, and shared. It is the domain that facilitates the communication of information among warfighters. It is the domain where the command and control of modern military forces is communicated, where commander's intent is conveyed.

Cognitive Domain: The cognitive domain is the domain of the mind of the warfighter and the warfighter's supporting populace. Many battles and wars are won or lost in the cognitive domain. The intangibles of leadership, morale, unit cohesion, level of training and experience, situational awareness, and public opinion are elements of this domain. This is the domain where commander's intent, doctrine, tactics, techniques, and procedures reside.[4]

These key concepts (physical, information, and cognitive) capture the operational environment of NCW in its best form, providing excellent focus factors that our NCW warriors must consider when developing NCW concepts. Currently most efforts in NCW have taken place primarily in the physical domain where the "techies" have focused on the sensor, shooter, and network components. The information domain, although still a secondary effort, has started to gain more prominence as our understanding of knowledge management and its corresponding impact on the military decision cycle has increased. It is the cognitive domain that our NCW experts continue to push back in priority. If this deficiency isn't corrected quickly, we are doomed to make the same mistakes we have made previously when we became over reliant on technology and forgot the impact of the human factor. It is only when all three of the domains are addressed harmonically will we be able to capitalize on the potential power of NCW.

Without a clear understanding of exactly what NCW is, and with the realization that we have an imbalanced approach in developing NCW concepts,

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[4] Dept of Defense Report to Congress March 2001 Network Centric Warfare, Executive Summary, pg. iv, http://www.defenselink.mil/nii/NCW/ncw_exec_sum.pdf 7 Apr 2005 (accessed)

we can now look at how this has impacted DoD's strategy for the implementation

of NCW and transformation. We can also begin to understand why those who are

executing these actions are under the mistaken impression that NCW may result

in the loss of the operational level of war as technology and knowledge make it

possible to flatten out command and control hierarchies.

Current DoD Strategy and Reality

If one looks at the myriad of documents pertaining to NCW and transformation

that is put out by DoD and the military services you will see lots of grand statements

concerning the desire, need, and intention to change the way we address this issue. Every

document discusses the need to break the old paradigms, to make NCW and

transformation a truly joint effort focused on developing the capabilities our military

needs to meet our nation's national and military objectives, and yet DoD still refuses to

substantially change how it does business in order to accomplish this desired

transformation. Development of network and knowledge management efforts continues

to be driven by service components without substantial synchronization. Organization

and culture continues to prevent the crossing of service boundaries to begin developing

"joint born" NCW capabilities. This is exactly the paradigm that DoD identified must be

broken in its NCW strategy when it states DoD will achieve NCW by "overcoming

impediments to progress" through "disruptive innovations," and yet they continue to do

business as usual.

Business strategy 101 tells us that any transformation of an organization must be

based on a carefully developed strategy with a clearly defined endstate and yet DoD has

decided to do the exact opposite. We don't have an endstate for transformation, instead

we choose to call our transformation a "state of mind," a continuing evolving process that

will one day get us where we are supposed to be. The danger of this strategy is that we

may set ourselves adrift in a sea of never ending change with no bearing to get us where

we need to be. If we look at DoD's stated strategy for NCW we can see it doesn't really

provide a definitive plan for achieving NCW; what it does is lay out the basic framework

for what to address in a strategy.

> DoD's strategy for NCW is based upon (1) setting priorities to enable,
> develop, and implement network-centric concepts and capabilities, (2)
> establishing specific goals and measuring progress toward these goals, and
> (3) overcoming impediments to progress. To ensure adequate focus on
> achieving DoD NCW goals, an Office of Transformation, reporting
> directly to the Secretary, will be established.[5]

If you continue to look for more structure in the DoD strategy you will find multiple

areas being addressed and yet there doesn't seem to be any one place where you can go to

find the priorities, goals, or metrics for achieving NCW. The 2004 National Military

Strategy also addresses the need to make our NCW strategy a joint process stating:

> Joint forces will require new levels of interoperability and systems that are
> "born joint," i.e. conceptualized and designed with joint architectures and
> acquisition strategies. This level of interoperability ensures that technical,
> doctrinal and cultural barriers do no limit the ability of joint commanders
> to achieve objectives.[6]

and yet we have done nothing to make our NCW processes joint developed. The Joint

staff has been tasked to address and integrate what they call the Network Centric

Operating Environment but the different services still continue to develop their own

NCW capabilities without real regard for a singular NCW architecture. Nor has DoD

done anything to really restructure how the services must develop or acquire these

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[5] Dept of Defense Report to Congress March 2001 Network Centric Warfare, Executive Summary, pg. ii,
http://www.defenselink.mil/nii/NCW/ncw_exec_sum.pdf 7 Apr 2005 (accessed)

[6] GEN Richard B. Myers, National Military Strategy of the United States of America 2004, pg 13

capabilities which our National Military Strategy states should be "born joint." We

simply continue to go on doing business the same old way and as an organization refuse

to make real transformational change.

Fortunately our governmental process of oversight recognizes this deficiency and

identifies it as one of the major oversight issues in a June 2004 report to Congress where

it specifically identifies joint NCW planning:

> Is the Administration's strategy for implementing NCW sufficiently joint?
> Is there an overall DOD information architecture, or enterprise
> architecture? Do the current service network architectures – Army
> LandWarNet, Navy ForceNet, Air Force C2 Constellation – allow systems
> to work together through the GIG, or do they enforce parochialism along
> service boundaries that is inconsistent with the Joint cyber environment?[7]

Unfortunately, all of these issues were directed by the Senate Armed Services Committee

to be addressed by DoD in the FY 2001 defense authorization bill with a response due

back in March 2002. Specific guidance was given to DoD to provide:

> (1) a clear definition of NCW; (2) identification and description of OSD,
> Joint staff and JFCOM activities to coordinate NCW related activities; (3)
> recommended metrics for evaluating progress….. (4) recommendations
> for joint concept development and joint experimentation; (5) progress
> made, as determined by quantitative standards…. (6) discussion of
> additional authorities, authorizations… required to effectively implement
> NCW; (7) joint requirements and acquisition policy changes being made
> or considered to implement NCW; (8) a discussion of how private sector
> lessons learned in networking are being incorporated; (9) a discussion of
> how DOD NCW systems will integrate with other agencies of the federal
> government….[8]

This is not to say that there has not been a lot of work done by DoD to resolve these

issues, and 9/11 certainly changed the focus of our nation's key leaders, but it does

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[7] Clay Wilson, Congressional Report for Congress, "Network Centric Warfare: Background and Oversight Issues for Congress", June 2, 2004, Wash D.C. Congressional Research Service, Library of Congress, pg 25.
[8] Christopher J. Castelli, "DOD told to detail integration of network centric warfare efforts", Inside the Navy, May 22, 2000

demonstrate the difficulty with which our military has struggled to gain direction and resolution on the most basic NCW issues.

So how do we break this wall of resistance and move forward with NCW in a substantial way? I believe the first thing we must decide is exactly what it is we are trying to accomplish with NCW. Where is, or should be, the focus that provides the azimuth that will enable us to move definitively forward in our NCW efforts? Alberts, Gartska, and Stein say NCW "must be deeply rooted in operational art."[9] I believe it is at the operational level where NCW will have the greatest impact and can be utilized to achieve its greatest potential, because it is at the operational level where the nexus of the physical, information, and cognitive domains occurs.

Operational Level is Key to Successful Transformation & Implementation of NCW

Span of control and technology have long been the decisive factors in military organization and a major reason for today's structure has been technological development. Ultimately it still falls back on the human factor, the ability of humans to understand, react, and direct action effectively that will determine our future organizational structure. The theory that NCW will flatten out the current organizational hierarchy and possibly result in the loss of the operational level of war is most likely focusing on the physical and information domains. Technology and knowledge can certainly lead to success, but only when applied with great skill and intelligence. It will be the cognitive domain, where operational art resides, that will enable military leaders to synchronize combat power and elements of national power, utilizing networks and

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[9] David S. Alberts, John J. Gartska, Frederick P. Stein, <u>Network Centric Warfare Developing and Leveraging Information Security, 2nd Ed (Revised),</u> C4ISR Cooperative Research Program, Wash D.C. Feb 2000, pg 3.
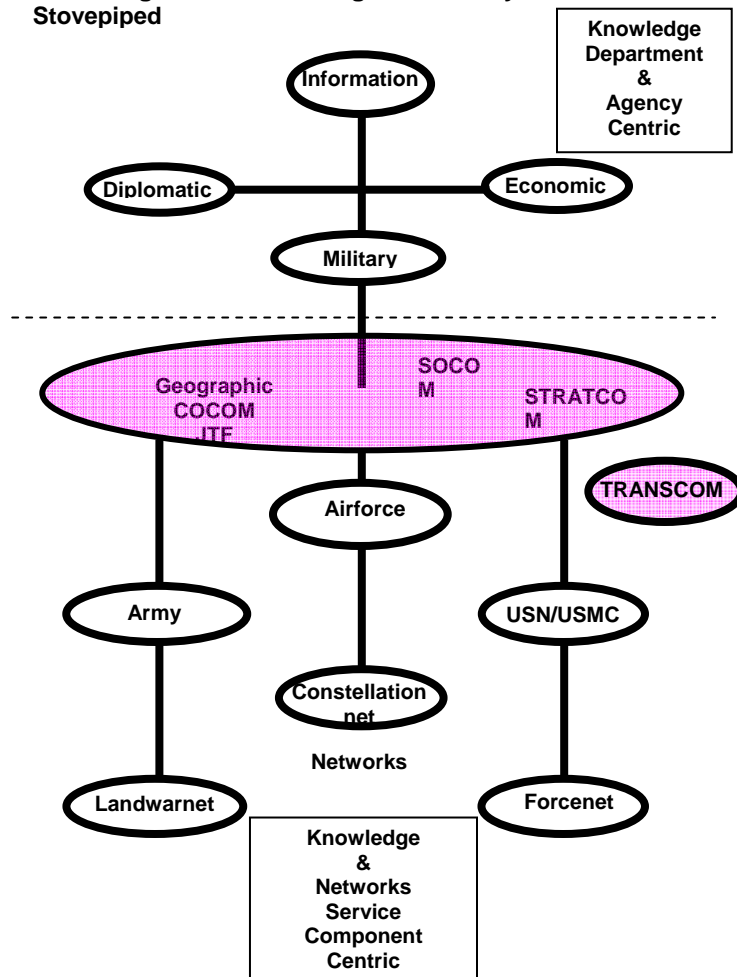
knowledge, to successfully employ military forces to achieve national and operational objectives in conjunction with other departments and agencies.

In the future we will have more integrated networks and exponentially greater information as NCW matures. At the same time this will result in a greater requirement for utilizing the operational arts to provide direction to this increase of information at greater speeds. To remove the operational level would leave strategic leaders trying to levy more information than humans are capable of physically and mentally handling.

A look at our current and future NCW architectures shows us that the operational level is where the three domains of NCW converge, the difference being how that convergence occurs.

Current Architecture

Knowledge & Networks Organizationally Stovepiped

Information

Knowledge Department & Agency Centric

Diplomatic — Economic

Military

Geographic COCOM JTF — SOCOM — STRATCOM

TRANSCOM

Airforce

Army — USN/USMC

Constellation net

Networks

Landwarnet — Forcenet
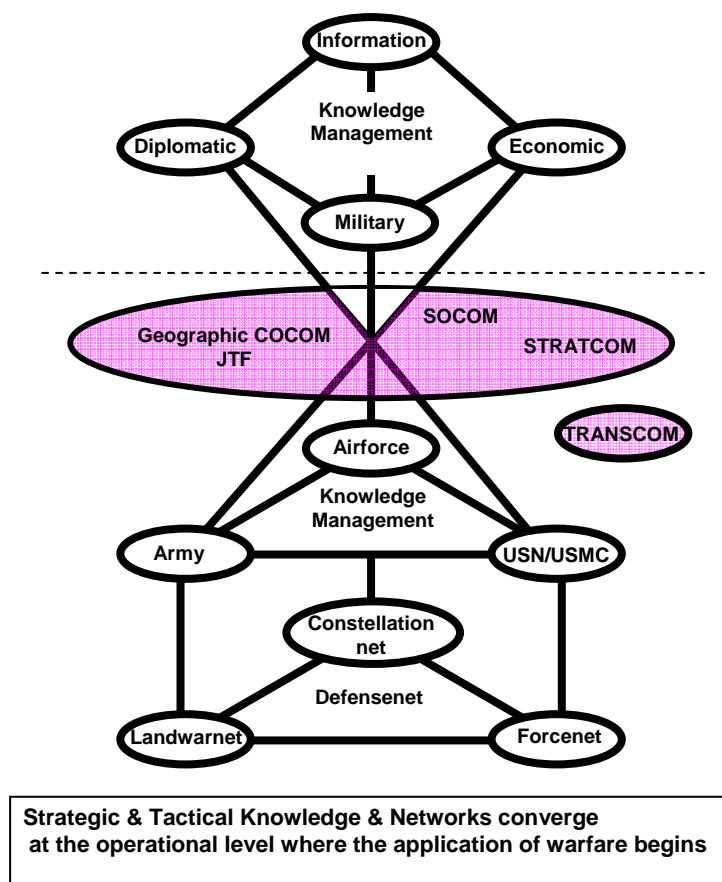
Knowledge & Networks Service Component Centric

In our current architecture networks and knowledge are not integrated until they converge at the operational level where the Combatant Commander or JTF must create systems to merge service specific processes. In today's military the operational level command spends much of their effort synchronizing service contributions of the operational functions. Because knowledge and networks aren't integrated from the start, much of the cognitive capacity of the operational level command is focused on gaining unity of effort in order to achieve the objective. It is extremely difficult for the operational command to manage the dominantly military environment, much less

adequately begin to integrate and synchronize other elements of our national power (diplomatic, economic, and information). Unfortunately, this process is not very effective and results in a degraded capability. As NCW capabilities improve, much of the integration and synchronization should occur automatically as integrated processes are developed. But that will not result in a loss of the operational level of war; rather it will enable the operational command to better synchronize all elements of national power to achieve operational and strategic objectives.

If we look at a future NCW architecture we will find that the operational level of command continues to be the focal point of NCW but for different reasons.

Network Centric
Architecture

    Knowledge & Networks Integrated Vertically / Horizontally

Strategic & Tactical Knowledge & Networks converge
at the operational level where the application of warfare begins

13

In this future architecture, the service component networks and knowledge will be integrated from the beginning. This will greatly increase the effectiveness of NCW and make possible the "self synchronization" of forces that is discussed so often in NCW literature. This self synchronization will be made technically possible by interactive knowledge and integrated networks, but will not be effective unless organized based on commander's intent and a cognitive plan for reaching an objective / endstate. In the future architecture, the primary focus of the operational command level will change from integrating service component forces to achieve an objective to the real integration of national power to achieve an objective.[10] This will make the operational level commander far more capable in conducting major combat operations as well as Phase IV Stability and Security Operations, peace keeping, humanitarian assistance, or other low intensity operations.

In the future of NCW the operational level of command is going to be more critical, capable, and effective than it is now. But there will certainly be changes to our military structure and organization, and to get to an effective NCW capability we will need to direct our transformation efforts to making the operational level commands our most effective organizations.

Organizational Change as a Result of NCW

Change in organizations is often feared. The information age will bring change. There has been a lot written about the change that NCW will bring to the military. Most discuss the compression or flattening out of the levels of war and almost all predict the loss or diminution of the operational level of war. In his article "Network Centric

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[10] GEN Richard B. Myers, <u>National Military Strategy of the United States of America 2004</u>, pg 18

Warfare and the Death of Operational Art," retired navy commander Erik Dahl cites

numerous quotes and makes the conclusion that the operational level of war is at risk:

> the levels of war may be collapsed, and "in future conflict the three levels
> of war, as separate and distinct loci of command and functional
> responsibilities, will be spaced and timed out of existence."
>
> 'the next phase of the revolution in military affairs … may make the
> operational level of warfighting, at least in its old manifestation,
> irrelevant'.
>
> NCW advocates also support experimentation with new organizational
> structures, often involving flatter hierarchies than are seen in most military
> units. This will tend to further flatten out the levels of war, possibly
> leading to a reduced or non-existent role for the operational level
> commander.[11]

Time has borne out a change in the structure, but not as Dahl and others have foreseen.

Indeed, it seems the operational level of command is growing in importance and

relevance in the NCW environment, primarily for the reasons I have stated previously.

The level that does seem to be flattening out is the tactical level. In the army for instance,

the division and corps levels of command are being merged and replaced by headquarters

designed to be functional as C2 for major land operations and / or joint operations with

emphasis on joint task force C2 at the operational level.

This trend towards greater focus on the operational level is likely to continue as

information and knowledge increase and technology enables a continued reduction of

service component tactical C2 levels. COCOM and JTF commands will provide the

operational art around which tactical capabilities will self synchronize. As the integration

of knowledge management increases among the departments and agencies that form the

national elements of power, operational level commands will be restructured to better

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[11] Erik J. Dahl, "Network Centric Warfare and The Death of Operational Art", Defence Studies, vol 2/1, Spring 2002, pg 8.

manage the integration of the elements of national power to achieve operational and strategic objectives as the service component capabilities become more self synchronizing.

Of course there will have to be significant changes in how we do business and how we resource our forces in order to support positive change.

In the future, the COCOM / JTF should be the driving force for the development of our NCW capabilities. The services networks should be developed as a joint function from their inception rather than having to be integrated afterwards in the JCOE. The service organizations responsible for their network developments must work together to design from inception, a network that seamlessly integrates tactical platforms and is just as capable at the tactical level as it is at the operational and strategic levels so information and knowledge can flow rapidly throughout the force to enable rapid decision making and action. Today's Landwarnet, Forcenet, and C2 Constellation net should begin their future development as one integrated "Defensenet." These networks should diverge only in their need to meet specific platform and application requirements unique to their specific service.

This should also hold true for functional applications based on knowledge management. Applications supporting the operational functions should begin their journey as joint applications which mine service specific data. These applications should also be based on defense common software in order to eliminate incompatibilities and the need to develop middleware that must be designed to force integration of applications.

In order to achieve this kind of integration, it may be necessary to restructure the services and their Title X responsibilities. Perhaps JFCOM may have to take on the

Title-X- like responsibilities for conventional joint forces that SOCOM does now for special operations forces. There is already precedence for JFCOM to assume this kind of role as the National Defense Act of 2004 granted JFCOM limited acquisition authority that enables them to conduct acquisition of limited systems required by Combatant Commands and Joint headquarters requiring immediate operational capabilities.[12]

This type of thinking does run against the grain of current think-tank strategists who believe we should go back to a more service-centric equipping for our military forces. In a briefing to the Joint Chiefs of Staff on 13 April 2005, former Deputy Defense Secretary, Dr John Hamre stated that the Defense Department needed to step back from current practices put in place by Goldwater-Nichols and "put the service chiefs back in charge of acquisition."[13]

Next, and very critical, is to eliminate what General William S. "Scott" Wallace, commander of the U.S. Army's V Corps during Operation Iraqi Freedom calls the "digital divide,"[14] or the disparity between digital and knowledge capabilities between the strategic, operational and tactical levels of war. As programs are developed, the resources have gone primarily to the theater-strategic or strategic level organizations and barely find their way down to lower echelons.

There have been efforts to break this digital divide, but most have fallen short. One of the current efforts is the Transformational Communications Architecture that is supposed to link DoD, Intelligence Community, and NASA networks to provide

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[12] JO1(SW/AW) Chris Hoffpauir, USJFCOM Public Affairs,
http://www.jfcom.mil/newslink/storyarchive/2005/pa041805.htm
[13] Dr John J.Hamre "Beyond Goldwater Nichols" Phase II Brief to JCS, 13 April 05 1430-1600 (former Dep SecDef and currently CEO of the Center for Strategic and International Studies)
[14] LTG William S. Wallace, during discussion with CJTF-7 C6 and 22nd Signal Brigade staff in Iraq following end of major combat operations April 2003.

information support from the strategic to tactical level.[15] Of course this is a major step in

the right direction, but the majority of organizations involved are strategic in nature and

the danger is that the Transformational Communications System (TCS) will integrate

organizations at the strategic and theater operational levels but the tactical level of these

networks will not be recognized, prioritized, or resourced sufficiently to meet the

bandwidth requirements needed to support the type of products and speed that would

make this program effective. Why, you ask? Because it is the service components that

are responsible for resourcing and building the tactical networks and their priorities may

not, and often are not, linked to those of the Transformational Communications Office.

In a perfect world the Office of Transformation, the Transformational Communications

Office, the Joint Staff, and the service components would all be working together towards

a common goal, but that just isn't the case in a resource constrained environment. The

difficulty in just getting the military services to work toward a common defense

architecture is an indicator of how difficult the road ahead is for a multi-agency

architecture. We will have to modify our current architecture development and

acquisition process into a DoD corporate system vice a service based system in order for

this integration to truly be effective.

     This leads us to need integrated, joint units to ensure service parochialism and

doctrine do not deter desired integration. For instance, signal units currently designed to

support echelons-above-corps in the army should no longer be army specific

organizations. These units, like the U.S. Army Network Command (NETCOM), should

be organized and bred joint along the lines of the Joint Communications Support Element

since their primary mission will be focused at supporting COCOM and JTF level

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[15] George Leopold, EE Times, 09/05/2002, http://www.eetimes.com/story/OEG20020905S0037

commands much as is the case in the CENTCOM AOR today. Had this been the case in

OIF, there would have been significantly better network and knowledge support from the

outset for CJTF-7 and the other major units and organizations expected to execute SASO

operations following major combat in Iraq. Given the difficulties in breaking the

doctrinal issues that prevented proper service or joint network support for the CJTF, it

should not be the services that resolve this issue, rather JFCOM should be given the lead

for establishing the Title X type requirements of these full time multi-service joint units.

Ultimately, the bottom line on the digital divide is that until we change the way

we are currently doing business and begin to ensure that the void at the tactical level is

filled, our military will not achieve the desired effects of a network centric force.

Operational Force – A knowledge based force

In the future, operational commanders are going to be major integrators of the

elements of national power. They will move away from combat power integrators into

true operational art, orchestrating military strength in concert with the unique capabilities

brought by the other organizations that make up the elements of our national power such

as was done by the Office of Reconstruction and Humanitarian Assistance and the

Coalition Provisional Authority in Iraq following the combat phase of OIF. To do this

successfully, our operational commands will need to be truly knowledge based forces and

integrated both in network and knowledge with the other departments and agencies of the

government.

Decision quality information will be as much or more critical to the operational

commander as the networking and self synchronization of tactical forces and their

weapons platforms. Although the future will certainly be a network centric force for the

U.S. military, warfare will continue to be leader centric. Leaders, not technology, will win our wars in the future. We already see that networked technology can enable us to win major combat operations, but it will never be able to perform operational art. The U.S. military has been overwhelmingly successful in shock and awe because of its current limited NCW abilities. That's great for decisive operations but we now need to focus on developing applications of knowledge management that will support the operational commander in all the other phases of a campaign that will ensure real victory and the successful achievement of national objectives. If we can focus our NCW efforts on making the operational level commander successful in all elements of warfare and not just the application of combat power to win decisive operations we will enable our nation to get beyond winning the battle and losing the peace.

Conclusion

Network centric warfare is clearly the next great revolution in warfare but it is certainly not going to be the death of the operational level of war. NCW will change our military and has already begun to reduce levels of command at the tactical level. But when NCW is implemented fully and the 3 domains of physical, information and cognitive are taken into account in that implementation it is clear that the operational level of war is not disappearing but becoming increasingly important. The operational commander of the future will practice the operational arts in the form that has been touted by Clausewitz and Sun Tzu and technology will once again become a tool rather than an answer.

NCW will change the military, but not as foreseen by the technology centric seers. What NCW will do is bring about a renaissance enabling future leaders to get back

to applying the operational arts rather than just synchronizing combat power. No, NCW

is not killing the operational level of war it is bringing it back to its rightful place as the

center of gravity for successfully achieving our nation's political objectives.

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